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AFFDL TECHNICAL REPORTS JANUARY - DECEMBER (INCLUDING PAPERS) D--ETC(U)
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AIR FORCE FLIGHT DYNAMICS LABORATORY
AIR FORCE SYSTEMS COMMAND
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

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72-126 16 Oct J. DeWeese 54008	Experimental Feasibility Study of Aerodynamic Reefing of Subsonic Parachutes P: 6065 F33615-68-C-1227	U A
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FLIGHT CONTROL DIVISION (FG)

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20 Jan	Maneuver Load Control Applications to	A
Capt. R. Strahota	a Large Bomber P: 8226 F33615-71-C-1384	
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13 Dec	Theory to the Development of Flight	A
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13 Dec	F33615-71-C-1349	A
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72-26 VOL I 8 Mar H. Woolard 55496	V/STOL Aircraft Aerodynamic Prediction Methods Investigation Vol I - Theoretical Development of Prediction Methods P: 698BT F33615-69-C-1602	U A
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72-37 G. Kurylowich 55496	An Analysis of the Stability and Control Characteristics of an Ejector Wing V/STOL During Transition P: D095 Internal	U B
72-39 31 Mar J. Pruner 52148	Capability of the Total In-Flight Simulator (TIFS) P: 684B F33615-71-C-1110	U A

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72-44 20 Apr A. Jones 55474	A Study of Effects of Parameter Variation on Flying Qualities of XV-4B V/STOL A/C P: 8219 Internal	U A
72-63 26 May R. Pope 54315	The Design of Stability Augmentation Systems for Decoupling-Aircraft Responses P: 8219 Internal	U A
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72-83 Vol II 25 Sep J. Jenkins	Vol II - Users Manual Computer Program P: 8219 F33615-71-C-1116	U A
72-92 28 Jul J. Stone 54315	Proceedings of the 8th Annual Conference on Manual Control P: 8219 C: NSR-23-005-364	U A
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17 Nov	Stability for Large Delta-Wing Transports	A
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55474	Vol I - Technical Results P: 8219	
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72-13	Test and Development of Flight Control	U
1 Feb	Actuation System Components for	B
T. Lewis	Military Aircraft P: 8225	
52541	F33615-71-C-1124	
72-21	A Method of Measuring Jet Exhaust	U
28 Feb	Density Profiles Using Soft X-Rays	A
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20 Mar	P: 8225 F33615-71-C-1474	B
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10 May	Study P: 8225 F33615-71-C-1485	B
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11 May	Development and Testing of a Vibragimbal	A
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72-104 18 Aug D. Rubertus 54607	A Control Augmentation System to Enhance Tactical Weapon Delivery Performance P: 8226 F33615-67-C-1101	U
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Flight Deck Development Branch (FGR)

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7 Mar	Station Management Problem P: 6190	A
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30 Aug	Control Display Program P: 6190	A
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FLIGHT MECHANICS DIVISION (FX)

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31 Jan	Heating P: 1366 Internal	A
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12 May	Procedures in Aircraft Flight Path	A
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2 Jun	Impingement P: 1366 F33615-71-C-1383	A
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24 Oct	Flight Vehicles ODIN/MFV- P: 1431	A
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72-85 Vol I 10 Jul J. Laughrey 54586	Analytical Study of In-Flight Thrust Reversers P: 1476 F33615-71-C-1208	U A
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72-101 Vol II 10 Aug P. Everling 54586	Vol II - Operating Manual for Twin- Nozzle Aftbody Drag and Internal Nozzle Performance Computer Deck P: 668A F33615-70-C-0511	U B
72-106 22 Aug R. Clark 52786	A COANDA Inlet/Jet Flap Diffuser Ejector P: 1366 F33615-70-C-1656	U A
72-145 28 Nov C. Jobe 55564	Evaluation of Separation Criteria and Their Application to Separated Flow Analysis P: 1366 F33615-72-Q-1096	U A

Experimental Engineering Branch (FXN)

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72-49 27 Apr E. White 52493	A Feasibility Study to Determine the Design Parameters of a Precision Aerothermodynamic Calorimetric System P: 1426 F33615-71-C-1302	U B
72-50 27 Apr E. White	Heat Flux Transducer Calibration P: 3170 F33615-69-C-1447	U B
72-144 28 Nov H. Lee 52493	Application of the Electron Beam Fluorescence Technique to the Measurement of the Properties of Nitric Oxide in Nonequilibrium Flows P: 1426 F33615-70-C-1761	U B

Aerospace Vehicle Branch (FXS)

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72-17 17 Feb C. Rupert 54279	Study to Extend the Low Frequency Test Capability in the Main Chamber of the AFFDL Sonic Fatigue Facility P: 4437 F33615-70-C-1168	U B
72-45 24 Apr U. Maurer 54279	Contribution to the Theory of Randomly Forces, Nonlinear, Multiple Degree of Freedom Coupled Mechanical Systems P: 1471 F33615-70-C-1206	U A
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72-138 Vol I 8 Nov D. Smith	Aero-Acoustic Loads Associated with High Beta Reentry Vehicles P: 1471 F33615-71-C-1245	U B
72-138 Vol II 8 Nov D. Smith	Aeroacoustic Loads Associated with High Beta Re-Engry Vehicles P: 1471 F33615-71-C-1245	U B

Aerospace Dynamics Branch (FYS)

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72-22 Pt I 29 Feb R. Taylor 53297	A Method of Minimum-Weight Synthesis for Flutter Requirements Pt I - Analytical Investigation P: 1370 F33615-70-C-1282	U B
72-22 Pt II 28 Feb R. Taylor	Pt II - Program Documentations P: 1370 F33615-70-C-1282	U B
72-40 Vol I A. Basso 55236	V/STOL Dynamics and Aeroelastic Rotor- Airframe Technology Vol I - State-of the-Art Review of V/STOL Rotor Techniques P: 1370 F33615-71-C-1310	U B
72-40 Vol II A. Basso	Vol II - Description and Correlation of New Methodologies P: 1370 F33615-71-C-1310	U B
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72-46 24 Apr V. Johnson 53297	Buffet Dynamic Loads During Transonic Maneuvers P: 1370 F33615-70-C-1272	U B
72-74 19 Jun R. Aschenbrenner 55733	Analysis of Taxiing Induced Vibrations in Aircraft by the Power Spectral Density Method P: 1370 F44620-71-C-0084	U A
72-114 Pt I 13 Sep S. Pollock 53297	Computer Techniques for the Rapid Flutter Clearance of Aircraft Carrying External Stores Pt I - Perturbation Theory & Application P: 1370 F33615-71-C-1603	U B

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13 Sep	Systems and Perturbation Program P: 1370	B
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20 Sep	Military Aircraft Feasibility Study	B
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Applications Office (SU)

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PROTOTYPE DIVISION (PT)

Tactical Airlift Tech ADPO (PTA)

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72-81	Summary of Design Studies and Results	U
3 Jul	of Model Tests of the Folding-Proprotor	A
D. Fraga	Aircraft Concept P: 643A	
54517	F33615-69-C-1578	
72-125	Analysis of Commercial and Military STOL	U
13 Oct	Design Criteria P: 643A	B
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Design Branch (PTB)

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72-147 Vol I	Propulsion System Installation Corrections	U
30 Nov	Vol I - Engineer's Manual P: 1366	B
G. Tamplin	F33615-72-C-1580	
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72-147 Vol II	Vol II - Programmer's Manual P: 1366	U
30 Nov	F33615-72-C-1580	B
G. Tamplin		
72-147 Vol III	Vol III - Sample Cases P: 1366	U
30 Nov	F33615-72-C-1580	B
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72-147 Vol IV
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G. Tamplin

Propulsion System Installation
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Definition & Data Corrections P: 1366
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Survivability/Vulnerability Branch (PTS)

AFFDL TR

72-8
25 Jan
J. Meiselman
56851

Vulnerability of Composite Aircraft
Structures P: 4363 F33615-71-C-1111

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PART II

AFFDL IN-HOUSE Technical Papers and Journal Articles

FBA

Fracture Mechanics Design Requirements - Review and Reflection
1972 WESTEC Conf., Los Angeles, CA., 14 Mar 72
Nathan G. Tupper

Ablative Materials Evaluation for High-Performance Lifting Entry
Vehicles
IES-NASA/AIAA/ASTM 6th Space Simulation Conf., 30 Apr-4 May 72
R. Mueller
D. K. Carnahan General Dynamics/Convair

Fracture Mechanics Applied to Aerospace Forgings
Forging Industry Assoc. Mtg., Montreal, Canada, 14 Nov 72
N. Tupper

Journal Article

Theoretical Tire Equations for Shimmy and Other Dynamic Studies
J of Aircraft V9n8 pg. 585-589, Aug 72
L. Rogers

FBC

Interaction of Cracks with Rigid Inclusions in Logitudinal Shear
Deformation. II Further Results
6th N. Sym on Fracture Mech., Philidelphis, Pa., Aug 72
Also being published in Progress in Flaw Growth and Fracture Toughness
Testing ASTM STP 536
G. Sendeckyj

Design and Failure Criteria of Adv. Composite Primary Structure
AGARD Conf. on Impact of Composite Materials on Aerospace Vehicles
and Propulsion Systems, Toulouse, Franch, Sep 72
L. Kelly

Journal Articles

Lateral Torsional Buckling of Parabolic Arches
ASCE, Vol 98
R. Sandhu et al May 72

FBC (Journal Articles)

Elastic Behavior of Composites

Micromechanics

Also Vol. in Treatise of Composite Materials Academic Press

G. Sendeckyj

Military Applications

To be published in Engineering Applications Volume of Treatise
on Composite Materials

FBE

HICAT Programs and "Diffusion in the Stratosphere

Appendix of CLIMATIC IMPACT ASSESSMENT PROGRAM (CIAP)

Vol 1 "The Natural Stratosphere" Dec 72

N. Loving

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Journal Article

Load-Time Relaxing of Residual Stresses,

AIAA J of Aircraft V9, n17

Capt. D. Golden Dec 72

FBR

Application of Holography to Non-Destructive Testing

Structures and Materials Panel AGARD, Copenhagen, Denmark 9-14 Apr 72

G. Maddux

Structural Design with Optimality-Based Algorithms,

International Sym. on Computers in Optimization of Structural

Design, Swansea, Wales Jan 72

L. Berke

Fracture Control Considerations in Aircraft Structural Design

Am. Society for Metals, WESTEC Conf., L.A., Ca., 13-17 Mar 72

H. Wood

Summary of Current and Projected USAF Fracture Requirements

ASM WESTEC Conf.

H. Wood

* Highlights of Critical Atmospheric Turbulence Test Program

U of West Fla. Feb 72

N. Loving

FBS

Ablative Materials Evaluation for High-Performance Lifting Entry
Vehicles

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R. Mueller

D. K. Carnahan GD/Ft. Worth

Results of Wing Carrythrough Preliminary Design Competition

AIA Structures Panel

K. Collier

FEE

Application of Heat Pipes to Electronic Equipment Cooling

Thermophysics Sym., San Antonio, Tex. 10-12 Apr 72

C. Feldmanis

Spacecraft Compatibility of Cryogenic Refrigerators

1972 Cryogenic Engineering Conf. NBS, Boulder, Colo. 9-11 Aug 72

W. Haskin

Captive Flight Acoustic Test Criteria for Aircraft Stores

43rd Shock & Vibration Sym., Monterey, Ca. 6 Dec 72

Dr. A. Burkhard

Aircraft Equipment Random Vibration Test Criteria Based on Vibrations

Induced by Turbulent Airflow Across Aircraft External Surfaces

43rd Shock and Vibrations Sym.

Dr. J. Dreher

FEA

C-115 ACLS Development Program Overview!

Conf. on Air Cushion Landing Systems Miami Beach, Fla. 12-14 Dec 72

W. Buzzard

FEM

Static Performance of Plenum & Peripheral Jet Air Cushions

Conf. on Air Cushion Landing Systems Miami Beach, Fl. 12-14 Dec 72

K. H. Digges

CC-115 ACLS Flight Test Prog.

G. R. Wyen

C. Stauffer Bell Aerospace

FEM

ACLS Technology Applied to the Problem of Drone Recovery
Maj. J. Vaughan
Conf on ACLS, Miami, Beach Fl.

Terrestrial Prototype of a Lunar Hopping Transporter
ASME Winter Annual Mtg. New York, 26-30 Nov 72
Capt. S. Peterson

Friction and Wear Characteristics of Selected Ceramics Coupled with
a Surface Hardened Metallic Alloy
74th Annual Mtg. of the Am. Ceramic Society, Washinton, D.C.,
8 May 72 (to be formally published)
J. Sikra AFML
J. Krysiak FEM
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Tire Deformation from Composite Theory
J of Tire Science and Technology Nov 72
H. Brewer

FER

Crew Station Design Using Computer Graphics
Inter-Agency Conf. on Management and Technology in the Crew Systems
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E. Roberts

FGA

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Vickers Aerospace Fluid Power Conf., Detroit, Mich, 30 Oct 72
V. Schmitt
Capt. J. Ramage

Aircraft Performance Enhancement Through Automatic Control
1972 NAECON Mtg., Dayton, Ohio 16 May 72
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FGC

A Practical Look at the Stall and High Lift Operation of Externally
Blown Flap STOL Transport Configurations
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